

What is claimed is:

1. A conductive plastic touch switch, the touch switch comprising:
a plastic substrate having a first side surface including at least two channels
5 formed within said first side surface and a second side surface including a manual
activation region opposite of said at least two channels;
at least two conductive traces formed within said at least two channels
respectively; and
a printed circuit board electrically attached to said at least two conductive
10 plastic traces;
wherein said plastic substrate is formed during a first mold process and said at
least two conductive plastic traces are in-molded during a second mold process.
2. The touch switch of claim 1 wherein said at least two conductive traces
15 are plastic conductive traces formed during said second mold process.
3. The touch switch of claim 2 wherein said at least two conductive plastic
traces are arranged in a pattern at a predetermined distance apart, said at least two
conductive plastic traces generating an electric field with said manual activation
20 region when a predetermined voltage is applied to said at least two conductive traces.
4. The touch switch of claim 3 wherein capacitances generated by said two
conductive plastic traces varies in response to an object selectably disposed within said
manual activation region.
- 25 5. The touch switch of claim 4 wherein at least two conductive plastic
traces are plated with a conductive modifier for increasing said conductivity of said at
least two conductive plastic traces.

6. The touch switch of claim 5 wherein said conductive modifier is plated on said two conductive plastic traces in an electroplating process.

5 7. The touch switch of claim 1 further comprising a zebra connector for electrically connecting said printed circuit board to said at least two conductive traces.

8. The touch switch of claim 1 further comprising a third channel formed within said first side surface, wherein a ground trace is molded within said third
10 channel.

9. The touch switch of claim 1 wherein said interior trim panel comprises an instrument panel.

15 10. The touch switch of claim 1 wherein said interior trim panel comprises a bezel.

11. The touch switch of claim 1 wherein said at least two conductive traces are insert molded during said second mold process.

20 12. The touch switch of claim 1 wherein said at least two conductive traces are formed on different planes.

25 13. The touch switch of claim 1 further comprising light pipes molded within said plastic substrate, said light pipes providing a passageway of light from a source of light on said printed circuit board to said second side surface for illuminating said second side surface.

14. A conductive plastic touch switch formed in an interior trim panel of a vehicle, the touch switch comprising:

a plastic substrate forming a portion of an interior trim panel of a vehicle, a first side surface including at least two channels formed within said first side surface and a second side surface including a manual activation region opposite said at least two channels;

at least two conductive plastic traces, said conductive plastic traces formed within said at least two channels; and

a printed circuit board electrically attached to said at least two conductive traces;

wherein said plastic substrate is formed during a first mold process and said at least two conductive plastic traces are in-molded during a second mold process.

15. A method for forming a touch switch integrated within an interior trim panel of a vehicle by a multi-shot in-molding process, said method comprising the steps of:

forming a plastic substrate having a first side surface including at least two channels formed within said first side surface and a second side forming an exterior surface of said touch switch including a manual activation region, said plastic substrate formed in a first shot into a mold;

in-molding at least two conductive traces within said at least two channels in a subsequent shot into said mold; and

electrically connecting said at least two conductive traces to a printed circuit board.

16. The method of claim 15 wherein said at least two conductive traces are arranged in a pattern providing an antenna function.

17. The method of claim 16 wherein said step of arranging said at least two conductive traces in a pattern includes spacing said at least two conductive traces a predetermined distance apart wherein an electric field is generated within said manual activation region when a predetermined voltage is applied to said at least two
5 conductive traces.

18. The method of claim 17 wherein said conductive traces are plastic conductive traces formed during said subsequent shot.

10 19. The method of claim 18 further comprising the step of plating said at least two conductive plastic traces with a conductive resin for increasing conductivity of said at least two conductive plastic traces.

15 20. The method of claim 15 further comprising step of forming at least three channels on said first side of said plastic substrate and molding at least three conductive traces within said at least three channels including a ground plate.